



Docket No.: 03235/100M087-US2  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Charles A. Altar et al.

Application No.: 10/664,705

Confirmation No.: 5502

Filed: September 18, 2003

Art Unit: 1649

For: GENE SIGNATURE OF ELECTROSHOCK  
THERAPY AND METHOD OF USE

Examiner: S. H. Standley

**TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In order to comply with the duty to disclose information under 37 C.F.R. § 1.56, Applicants submit herewith an Information Disclosure Statement pursuant to the requirements of 37 C.F.R. §§ 1.97 and 1.98. In particular, Applicants submit herewith Form PTO/SB/08a/b (Substitute for Form 1449A/B/PTO) listing documents AA-CR for consideration by the Examiner. Copies of cited documents AC-CR are also submitted herewith. In order to avoid overburdening the Examiner, copies of documents AA and AB are not submitted herewith since these documents are U.S. patents. *See* 37 C.F.R. § 1.98(a)(2)(ii). However, Applicants will gladly provide copies of these references at the Examiner's request.

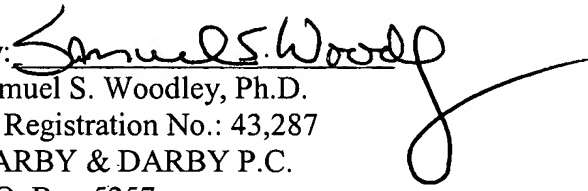
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Respectfully submitted,

Dated: October 26, 2005

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PTO/SB/08a/b (07-05)

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U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA*	US-5,859,197	01-12-1999	Theill et al.	
	AB*	US-5,817,784	10-06-1998	Theill et al.	

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>	
	AC	FOCHTMANN, "Animal Studies Electroconvulsive Therapy: Foundations for Future Research," Psychopharmacology Bulletin, Vol. 30 No. 3, 321-381 (1994)		
	AD	BIEGON et al., "Localization of the Effects of Electroconvulsive Shock on $\beta$ -Adrenoceptors in the Rat Brain," European Journal of Pharmacology, 123:329-334 (1986)		
	AE	ALTAR et al., "Efficacy of Brain-Derived Neurotrophic Factor and Neurotrophin-3 on Neurochemical and Behavioral Deficits Associated with Partial Nigrostriatal Dopamine Lesions," Journal of Neurochemistry, 63:1021-1032 (1994)		
	AF	MAMOUNAS et al., "Brain-Derived Neurotrophic Factor Promotes the Survival and Sprouting of Serotonergic Axons in Rat Brain," The Journal of Neuroscience, 15 (12):7929-7939 (1995)		
	AG	MARTIN-IVERSON et al., "Brain-derived Neurotrophic Factor and Neurotrophin-3 Activate Striatal Dopamine and Serotonin Metabolism and Related Behaviors: Interactions with Amphetamine," The Journal of Neuroscience, 14 (3):1262-1270 (1994)		
	AH	SIUCIAK et al., "Antidepressant-Like Effect of Brain-derived Neurotrophic Factor (BDNF)," Pharmacology Biochemistry and Behavior, Vol. 56, No. 1, 131-137 (1997)		
	AI	ROCAMORA et al., "Limbic seizures induce a differential regulation of the expression of nerve growth factor, brain-derived neurotrophic factor and neurotrophin-3, in the rat hippocampus," Molecular Brain Research, 13:27-33 (1992)		
	AJ	HENDRIKSEN et al., "Altered hippocampal gene expression prior to the onset of spontaneous seizures in the rat post-status epilepticus model," European Journal of Neuroscience, Vol. 14, 1475-1484 (2001)		
	AK	LUKASIUK et al., "cDNA profiling of epileptogenesis in the rat brain," European Journal of Neuroscience, Vol. 17, 271-279 (2003)		
	AL	KIM et al., "Electroconvulsive Shock Reduces Inositol Trisphosphate Receptor1 mRNA in Rat		
Examiner Signature				Date Considered

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		Brain," Mol. Cells, Vol. 12, No. 2, 173-177 (2001)	
AM	JENSEN et al., "Chronic Antidepressant Treatments Decrease Pro-Opiomelanocortin mRNA Expression in the Pituitary Gland: Effects of Acute Stress and 5-HT <sub>1A</sub> Receptor Activation," Journal of Neuroendocrinology, Vol. 13, 887-893 (2001)		
AN	JANG et al., "Isoform Specific Changes of Adenylate Cyclase mRNA Expression in rat Brain Following Chronic Electroconvulsive Shock," Prog. Neuro-Psychopharmacol. & Biol. Psychiat., Vol. 25, 1571-1581 (2001)		
AO	KONDRATYEV et al., "Electroconvulsive shock exposure prevents neuronal apoptosis after kainic acid-evoked status epilepticus," Molecular Brain Research, 91:1-13 (2001)		
AP	KOUBI et al., "Regulation of expression and enzymatic activities of tyrosine and tryptophan hydroxylases in rat brain after acute electroconvulsive shock," Brain Research, 905, 161-170 (2001)		
AQ	SHEN et al., "Electroconvulsive shock regulates serotonin transporter mRNA expression in rat raphe nucleus," Psychiatry and Clinical Neurosciences, 55:75-77 (2001)		
AR	BURNET et al., "Electroconvulsive shock increase tachykinin NK <sub>1</sub> receptors, but not the encoding mRNA, in rat cortex," European Journal of Pharmacology, 413:213-219 (2001)		
AS	Chen et al, "Regulation of GFR $\alpha$ -1 and GFR $\alpha$ -2 mRNAs in Rat Brain by Electroconvulsive Seizure," Synapse, 39:42-50 (2001)		
AT	CHO et al, "Differential changes in the expression of cyclic nucleotide phosphodiesterase isoforms in rat brains by chronic treatment with electroconvulsive shock," Experimental and Molecular Medicine, Vol. 32, No. 3, 110-114 (2000)		
AU	LAMMERA et al, "Selective increase of dopamine D <sub>3</sub> receptor gene expression as a common effect of chronic antidepressant treatments," Molecular Psychiatry, 5:378-388 (2000)		
AV	MADSEN et al., "Electroconvulsive Stimuli Enhance Both Neuropeptide Y Receptor Y1 and Y2 Messenger RNA Expression and Levels of Binding in the Rat Hippocampus," Neuroscience, Vol. 98, No. 1, 33-39 (2000)		
AW	HUSUM et al., "Involvement of hippocampal neuropeptide Y in mediating the chronic actions of lithium, electroconvulsive stimulation and citalopram," Neuropharmacology, 39:1463-1473 (2000)		
AX	VALENTINE et al., "Fragile X ( <i>fmr 1</i> ) mRNA expression is differentially regulated in two adult models of activity-dependent gene expression," Molecular Brain Research, 75:337-341 (2000)		
AY	BURNET et al., "Expression of 5-HT receptors and the 5-HT transporter in rat brain after electroconvulsive shock," Neuroscience Letters, 277:79-82 (1999)		
AZ	PEI et al., "Alteration in Expression of G-Protein-Activated Inward Rectifier K <sup>+</sup> -Channel Subunits GIRK1 and GIRK2 in the Rat Brain Following Electroconvulsive Shock," Neuroscience, Vol. 90, No. 2, 621-627 (1999)		
BA	TAKAHASHI et al., "Chronic Antidepressant Administration Increases the Expression of cAMP-Specific Phosphodiesterase 4A and 4B Isoforms," The Journal of Neuroscience, 19(2):610-618 (1999)		
BB	WATKINS et al., "Differential effects of electroconvulsive shock on the glutamate receptor mRNAs for NR2A, NR2B and mGluR5b," Molecular Brain Research, 61:108-113 (1998)		
BC	SUDA et al., "Transcriptional and Translational Regulation of Phosphodiesterase Type IV Isozymes in Rat Brain by Electroconvulsive Seizure and Antidepressant Drug Treatment," Journal of Neurochemistry, Vol. 71, No. 4, 1554-1563 (1998)		
BD	ZETTERSTROM et al., "Repeated electroconvulsive shock extends the duration of enhanced		

Examiner Signature		Date Considered	
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		gene expression for BDNF in rat brain compared with a single administration," Molecular Brain Research, 57:106-110 (1998)	
	BE	GARCIA et al., "Acute and repeated ECS treatment increases CRF, POMC and PENK gene expression in selected regions of the rat hypothalamus," Molecular Neuroscience, Vol. 9, No. 1, 73-77 (1998)	
	BF	PEI et al., "Changes in mRNA abundance of microtubule-associated proteins in the rat brain following electroconvulsive shock," Molecular Neuroscience, Vol. 9, No. 3, 391-394 (1998)	
	BG	O'DONOVAN et al., "Sequential Expression of Egr-1 and Egr-3 in Hippocampal Granule Cells Following Electroconvulsive Stimulation," Journal of Neurochemistry, Vol. 70, No. 3, 1241-1248 (1998)	
	BH	XING et al., "Rat nurr1 is prominently expressed in perirhinal cortex, and differentially induced in the hippocampal dentate gyrus by electroconvulsive vs. kindled seizures," Molecular Brain Research, 47:251-261 (1997)	
	BI	WANG et al., "Electroconvulsive treatment evokes release of preprotachykinin-A mRNA into the cerebrospinal fluid and ocular aqueous humor of rabbits," Neuroscience Letters, 226:151-154 (1997)	
	BJ	PEI et al., "Differential Effects of Acute and Chronic Electroconvulsive Shock on the Abundance of Messenger RNAs for Voltage-Dependent Potassium Channel Subunits in the Rat Brain," Neuroscience, Vol. 78, No. 2, 343-350 (1997)	
	BK	ZACHRISSON et al., "Decreased Levels of Preprotachykinin-A and Tachykinin NK1 Receptor mRNA in Specific Regions of the Rat Striatum After Electroconvulsive Stimuli," European Journal of Pharmacology, 319:191-195 (1997)	
	BL	ZACHRISSON et al., "Effects of Chronic Lithium and Electroconvulsive Stimuli on Cholecystokinin mRNA Expression in the Rat Brain," Molecular Brain Research, 43:347-350 (1996)	
	BM	JUNG et al., "Induction of Tetradecanoyl Phorbol Acetate-Inducible Sequence (TIS) Genes by Electroconvulsive Shock in Rat Brain," Society of Biological Psychiatry, 40:503-507 (1996)	
	BN	MCGOWAN et al., "Hippocampal and Cortical G Protein (G <sub>s</sub> α, G <sub>o</sub> α and G <sub>i2</sub> α) mRNA Expression After Electroconvulsive Shock or Lithium Carbonate Treatment," European Journal of Pharmacology, 306:249-255 (1996)	
	BO	WOLDBYE et al., "Prolonged Induction of c-fos in Neuropeptide Y- and Somatostatin-immunoreactive Neurons of the Rat Dentate Gyrus After Electroconvulsive Stimulation," Brain Research, 720:111-119 (1996)	
	BP	PORTER et al., "Contrasting Effects of Electroconvulsive Shock on mRNAs Encoding the High Affinity Kainate Receptor Subunits (KA1 and KA2) and Cyclophilin in the Rat," Brain Research, 710:97-102 (1996)	
	BQ	NAYLOR et al., "Repeated ECS Induces GluR1 mRNA But Not NMDAR1A-G mRNA in the Rat Hippocampus," Molecular Brain Research, 35:349-353 (1996)	
	BR	FITZGERALD et al., "Electroconvulsive Seizure Increases the Expression of CREM (Cyclic AMP Response Element Modular) and ICER (Inducible Cyclic AMP Early Repressor) in Rat Brain," Journal of Neurochemistry, Vol. 66, No. 1, 429-432 (1996)	
	BS	CHEN et al., "Regulation of ΔFosB and FosB-like Proteins by Electroconvulsive Seizure and Cocaine Treatments," Molecular Pharmacology, 48:880-889 (1995)	
	BT	NIBUYA et al., "Regulation of BDNF and trkB mRNA in Rat Brain by Chronic Electroconvulsive Seizure and Antidepressant Drug Treatments," The Journal of Neuroscience, 15(11): 7539-7547 (1995)	
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BU	SMITH et al., "Electroconvulsive Shock Increases Dopamine D <sub>1</sub> and D <sub>2</sub> Receptor mRNA in the Nucleus of the Rat," <i>Psychopharmacology</i> , 120:333-340 (1995)	
BV	BURNET et al., "Repeated ECS Differentially Affects Rat Brain 5-HT <sub>1A</sub> and 5-HT <sub>2A</sub> Receptor Expression," <i>Molecular Neuroscience</i> , 6:901-904 (1995)	
BW	LINDEFORS et al., "Spatiotemporal Selective Effects on Brain-Derived Neurotrophic Factor and <i>trkB</i> Messenger RNA in Rat Hippocampus by Electroconvulsive Shock," <i>Neuroscience</i> , Vol. 65, No. 3, 661-670 (1995)	
BX	DZIEDZICKA-WASYLEWSKA et al., "The Effect of Prolonged Treatment with Imipramine and Electroconvulsive Shock on the Levels of Endogenous Enkephalins in the Nucleus Accumbens and the Ventral Tegmentum of the Rat," <i>J. Neural Transm [Gen Sect]</i> , 102:221-228 (1995)	
BY	KIM et al., "Electroconvulsive Shock Reduces Inositol 1,4,5-Triphosphate 3-Kinase mRNA Expression in Rat Dentate Gyrus," <i>Journal of Neurochemistry</i> , Vol. 63, No. 5, 1991-1994 (1994)	
BZ	BRADY et al., "Repeated Electroconvulsive Shock Produces Long-lasting Increases in Messenger RNA Expression of Corticotrophin-releasing Hormone and Trypsin Hydroxylase in Rat Brain," <i>The Journal of Clinical Investigation, Inc.</i> , Vol. 94, 1263-1268 (1994)	
CA	PASSARELLI et al., "Effects of Electroconvulsive Shock on the Levels of hsp70 and hsc73 mRNA in the Rat Brain," <i>Neuroscience Letters</i> , 177:147-150 (1994)	
CB	MIKKELSEN et al., "Electroconvulsive Shock Increase the Expression of Neuropeptide Y (NPY) mRNA in the Piriform Cortex and the Dentate Gyrus," <i>Molecular Brain Research</i> , 23:317-322 (1994)	
CC	FOLLESA et al., "Regional and Temporal Pattern of Expression of Nerve Growth Factor and Basic Fibroblast Growth Factor mRNA in Rat Brain Following Electroconvulsive Shock," <i>Experimental Neurology</i> , 127:37-44 (1994)	
CD	KRAGH et al., "Repeated Electroconvulsive Shocks Cause Transient Changes in Rat Hippocampal Somatostatin and Neuropeptide Y Immunoreactivity and mRNA in Situ Hybridization Signals," <i>Exp. Brain Res.</i> , 98:305-313 (1994)	
CE	BUTLER et al., "Chronic Electroconvulsive Seizures Increase the Expression of Serotonin <sub>2</sub> Receptor mRNA in Rat Frontal Cortex," <i>Journal of Neurochemistry</i> , Vol. 61, No. 4, 1270-1276	
CF	PASSARELLI et al., "Somatostatin mRNA in the Hippocampal Formation Following Electroconvulsive Shock in the Rat," <i>Neuroscience Letters</i> , 153:197-201 (1993)	
CG	HOSODA et al., "Regulation of $\beta$ <sub>1</sub> -Adrenergic Receptor mRNA and Ligand Binding by Antidepressant Treatments and Norepinephrine Depletion in Rat Frontal Cortex," <i>Journal of Neurochemistry</i> , Vol. 60, No. 4, 1335-1343 (1993)	
CH	KAPUR et al., "Electroconvulsive Shock Increase Tyrosine Hydroxylase and Neuropeptide Y Gene Expression in the Locus Coeruleus," <i>Molecular Brain Research</i> , 18:121-126 (1993)	
CI	PRATT et al., "Electroconvulsive Shock Alters GABA <sub>A</sub> Receptor Subunit mRNAs: Use of Quantitative PCR Methodology," <i>Brain Research Bulletin</i> , Vol. 30, 691-693 (1993)	
CJ	WONG et al., "Induction of Constitutive Heat Shock Protein 73 mRNA in the Dentate Gyrus by Seizures," <i>Molecular Brain Research</i> , 13:19-25 (1992)	
CK	LINDEFORS et al., "Repeated Electroconvulsive Shock Increases Tachykinin and Cholecystokinin mRNA Expression in Ventral Periaqueductal Gray," <i>Neuroscience</i> , Vol. 45, No. 1, 73-80 (1991)	
CL	KANG et al., "GABA <sub>A</sub> Receptor mRNAs are Increased After Electroconvulsive Shock,"	

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		Psychopharmacology Bulletin, Vol. 27, No. 3, 359-363 (1991)	
	CM	COLE et al., "Rapid Rise in Transcription Factor mRNAs in Rat Brain After Electroshock-Induced Seizures," Journal of Neurochemistry, Vol. 55, No. 6, 1920-1927 (1990)	
	CN	HERMAN et al., "Chronic Electroconvulsive Shock Treatment Elicits Up-Regulation of CRF and AVP mRNA in Select Populations of Neuroendocrine Neurons," Brain Research, 501:235-246 (1989)	
	CO	XIE et al., "Single or Repeated Electroconvulsive Shocks After the Levels of Prodynorphin and Proenkephalin mRNAs in Rat Brain," Molecular Brain Research, 6:11-19 (1989)	
	CP	YOSHIKAWA et al., "Electroconvulsive Shock Increases Preproenkephalin Messenger RNA Abundance in Rat Hypothalamus," Proc. Natl. Acad. Sci. USA, Vol. 82, 589-593 (1985)	
	CQ	Masserano et al., "Electroconvulsive Shock Increases Tyrosine Hydroxylase Activity in the Brain and Adrenal Gland of the Rat," Science, Vol. 214, 662-665 (1981)	
	CR	NEWTON, et al., "Gene Profile of Electroconvulsive Seizures: Induction of Neurotrophic and Angiogenic Factors", J. Neurosci. 23(34):10841-51 (2003).	

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